



Environment,  
Climate Change & Water  
National Parks & Wildlife Service



# Cook Island Nature Reserve

## Plan of Management





**COOK ISLAND NATURE RESERVE  
PLAN OF MANAGEMENT**

**NSW National Parks and Wildlife Service**

**Part of the Department of Environment, Climate Change and Water**

**February 2011**

**This plan of management was adopted by the Minister for Climate Change and the Environment on 15<sup>th</sup> February 2011.**

### **Acknowledgements**

The NPWS acknowledges that this reserve is in the traditional country of the Minjungbal people of the Bundjalung nation and also acknowledges that the Githabul and Yugambeh nations have traditional knowledge of the area.

This plan of management is based on a draft plan prepared by staff of the Northern Rivers Region of the NSW National Parks and Wildlife Service (NPWS), part of the Department of Environment, Climate Change and Water and Southern Cross University student interns Dan Gorton, Emma Kirsner and Jane Saxton.

Cover photo of Cook Island by Lance Tarvey, NPWS.

For additional information or any inquiries about this reserve or this plan of management, contact the NPWS Tweed Area Office, PO Box 5081, South Murwillumbah NSW 2484 or by telephone on (02) 6670 8600.

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## FOREWORD

Cook Island Nature Reserve is located approximately 600 metres offshore from Fingal Head and four kilometres southeast of Tweed Heads on the far north coast of NSW. The reserve is 4.6 hectares in size and is surrounded by Cook Island Aquatic Reserve.

Cook Island Nature Reserve was reserved to protect the seabirds and shorebirds that roost and breed on the island. The reserve is listed on the Register of the National Estate because of its significance as a breeding habitat for seabirds. Twelve migratory bird species of international significance visit the island, of which two are listed as endangered and two as vulnerable under the *Threatened Species Conservation Act 1995*. A further three bird species are also listed as vulnerable but are not listed under international treaties.

Cook Island is important to the Bundjalung Aboriginal people and there are a number of mythological stories associated with the island.

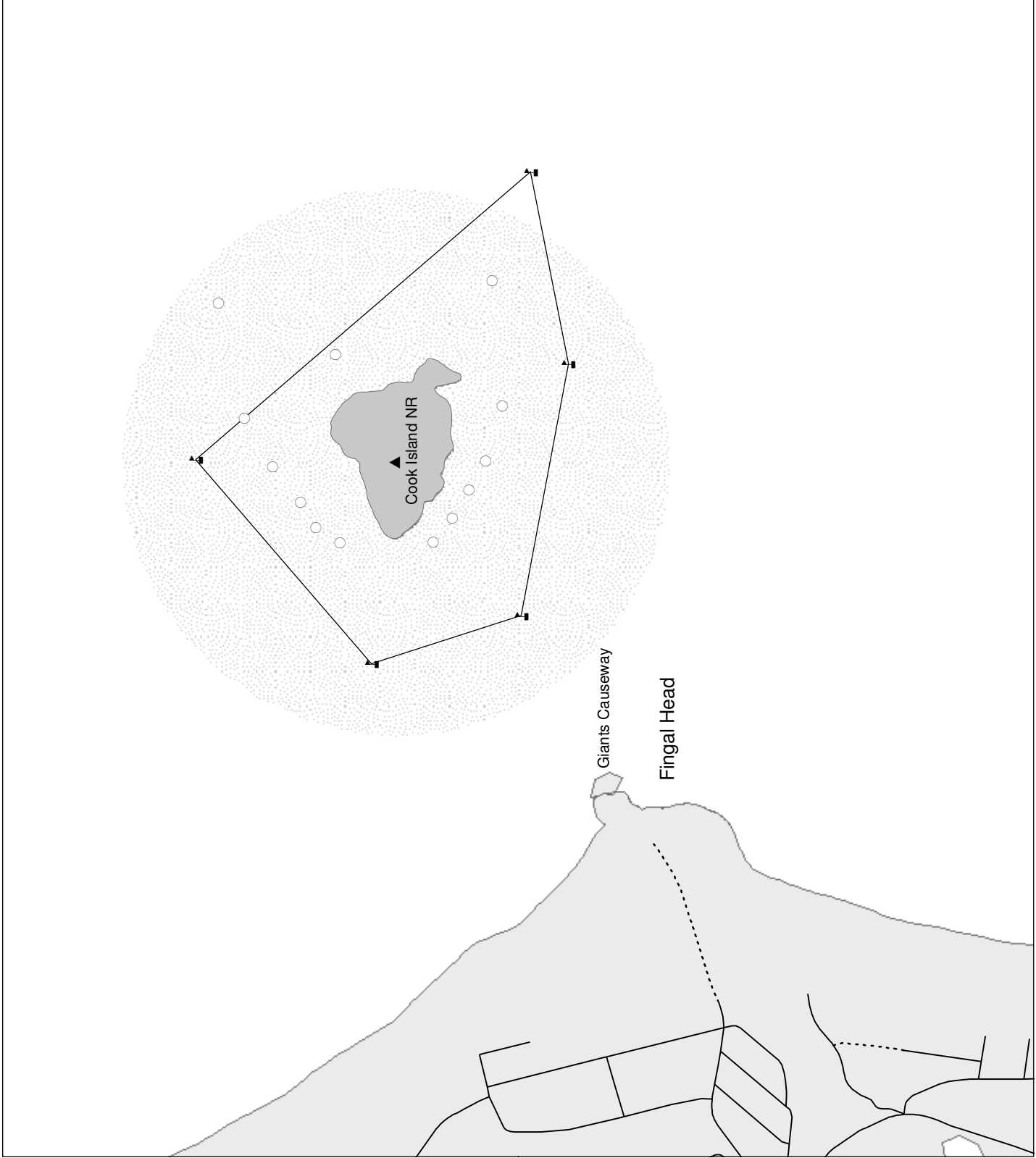
The New South Wales *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each nature reserve. A draft plan of management for Cook Island Nature Reserve was placed on public exhibition from 12<sup>th</sup> February until 24<sup>th</sup> May 2010. The submissions received were carefully considered before adopting this plan.

This plan contains a number of actions to achieve the State Plan priority to “Protect our native vegetation, biodiversity, land, rivers and coastal waterways”, including implementation of recovery actions for threatened species, control of introduced species, exclusion of fire, and restrictions on visitor use of the reserve.

This plan of management establishes the scheme of operations for Cook Island Nature Reserve. In accordance with section 73B of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.

A handwritten signature in black ink, appearing to read 'Frank Sartor', written in a cursive style.

**Frank Sartor MP**  
**Minister for Climate Change and the Environment**



### Planning area

- Moorings buoys
- ▲ Survey Mark
- ▬ Marker buoys (fishing closure)
- Road
- - - Footpath
- Cook Island Nature Reserve
- ▨ Aquatic reserve

### Regional location

- - - State border
- NPWS reserves

The regional map shows the location of the planning area within Queensland (QLD) and New South Wales (NSW). Key locations labeled include Gold Coast, Tweed Heads, and Kingscliff. A box indicates the area shown in the main map. The map includes a legend for State border and NPWS reserves, and a scale of 1:250,000.

## 1. LOCATION, GAZETTAL AND REGIONAL CONTEXT

Cook Island Nature Reserve (hereafter referred to as the “reserve”) is located approximately 600 metres offshore from Fingal Head and four kilometres southeast of Tweed Heads on the far north coast of NSW (see Map). The reserve is 4.6 hectares in size and is reserved down to mean high water mark.

The reserve was gazetted in August 1959 as a Faunal Reserve under the *Fauna Protection Act 1948* to protect the seabirds and shorebirds that roost and breed on the island. In 1967 it became a nature reserve on commencement of the *National Parks and Wildlife Act 1967*. The reserve is listed on the Register of the National Estate because of its significance as a breeding habitat for seabirds, in particular the crested tern and wedge-tailed shearwater. Twelve migratory bird species of international significance visit the island. Seven fauna species recorded in the reserve are listed under the *Threatened Species Conservation Act 1995* (TSC Act).

The reserve is surrounded by Cook Island Aquatic Reserve (hereafter referred to as the “aquatic reserve”) which was declared in 1998 under the *Fisheries Management Act 1994* to protect the marine biodiversity of the island’s underlying reef system (DECCW 2009). The aquatic reserve is 78 hectares in size and includes the waters within and around Cook Island to a 500 metre radius from a survey marker on the island. This draft plan of management does not apply to the aquatic reserve.

Cook Island Nature Reserve is part of a regional system of conservation reserves. It is located close to Ukerebagh Nature Reserve, Tweed Heads Historic Site and Tweed Estuary Nature Reserve, which provide additional habitat for several of the bird species that occur in Cook Island Nature Reserve. The reserve also has a biogeographical relationship with other offshore islands used by seabirds, such as the Solitary Islands group to the south. The reserve is within the geographical area of the Tweed Shire Council local government, the Northern Rivers Catchment Management Authority and the Tweed Byron Local Aboriginal Land Council.

## 2. MANAGEMENT CONTEXT

### 2.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of nature reserves in NSW is in the context of the legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act), the NPW Regulation, *Threatened Species Conservation Act 1995* (TSC Act), and the policies of the National Parks and Wildlife Service (NPWS).

Other legislation, international agreements and charters may also apply to management of the area. In particular, the *Environmental Planning and Assessment Act 1979* (EPA Act) may require the assessment and mitigation of the environmental impacts of works proposed in this plan. The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) also applies in relation to actions that may impact on migratory species or threatened species listed under that Act.

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, no operations may be undertaken within Cook Island Nature Reserve except in accordance with this plan. This plan will also apply to any future additions to Cook Island Nature Reserve. Should management strategies or works be proposed for Cook Island Nature Reserve or any additions that are not consistent with this plan, an amendment to this plan or a new plan will be prepared and exhibited for public comment.

## **2.2 MANAGEMENT PURPOSES AND PRINCIPLES**

Nature reserves are reserved under the NPW Act to protect and conserve areas containing outstanding, unique or representative ecosystems, species, communities or natural phenomena.

Under the Act (section 30J), nature reserves are managed to:

- conserve biodiversity, maintain ecosystem functions, and protect geological and geomorphological features and natural phenomena;
- conserve places, objects, features and landscapes of cultural value;
- promote public appreciation, enjoyment and understanding of the reserve's natural and cultural values; and
- provide for appropriate research and monitoring.

Nature reserves differ from national parks in that they do not have the provision of recreation as a management principle.

## **2.3 STATEMENT OF SIGNIFICANCE**

Cook Island Nature Reserve is considered to be of significance for:

### Biological Values:

- Seven fauna species recorded in the reserve are listed under the TSC Act and the reserve provides habitat for twelve migratory bird species listed in international treaties. It is a significant breeding habitat for seabirds such as the crested tern and wedge-tailed shearwater.
- The reserve complements and enhances the surrounding Cook Island Aquatic Reserve which protects the marine biodiversity of the islands underlying reef system.

### Heritage Values:

- Cook Island is important to the Bundjalung Aboriginal people and there are a number of mythological stories associated with the island.

## **2.4 SPECIFIC MANAGEMENT DIRECTIONS**

In addition to the general principles for the management of nature reserves (refer section 2.2), management of the Cook Island Nature Reserve will focus on protecting the important bird habitat.



Major strategies to achieve these objectives are:

- Implementation of relevant strategies in the Priorities Action Statement and recovery plans for threatened species;
- Control of introduced species and exclusion of fire to protect biodiversity; and
- Restricting visitor use of the reserve to protect roosting and nesting seabirds and shorebirds.

### 3. VALUES

The location, landforms and plant and animal communities of an area have determined how it has been used and valued. Both Aboriginal and non-Aboriginal people place values on natural areas, including aesthetic, social, spiritual and recreational values. These values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. This plan of management aims to conserve both natural and cultural values. For reasons of clarity and document usefulness, various aspects of natural heritage, cultural heritage, threats and on-going use are dealt with individually, but their inter-relationships are recognised.

#### 3.1 GEOLOGY, LANDSCAPE AND HYDROLOGY

The reserve is composed of rocks from the Lismore Basalt Group, formed by lava flows from the Mount Warning Shield Volcano approximately 20 million years ago. The topography is a protrusion of eroded basalt, extending 24.8 metres above sea level, with a shallow cover of topsoil overlying a plateau top and a gentle western slope (Graham, 2001). The northern, southern and eastern sides of the rocky outcrop form sheer cliffs, surrounded by low-lying rock shelves.

The average annual rainfall for the reserve is approximately 1470 millimetres. A semi-permanent freshwater basin on the northern side of the island is the only source of freshwater in the reserve.

#### 3.2 NATIVE PLANTS

There are twenty five native plant species on the reserve, the majority of which are herbs and vines forming dense mats, in three distinct flora habitats: elevated locations; rocky crevices; and lower sites at the base of cliffs. Several flora surveys have been undertaken in the reserve (Charley 1992; Floyd 1981; Lane 1973).

Native plant species growing at the elevated locations include: tuckeroo (*Cupaniopsis anacardioides*); monkey rope (*Parsonsia straminea*); milk vine (*Marsdenia rostrata*); coastal boobialla (*Myoporum insulare*); flax-lily (*Dianella caerulea*); spiney-headed mat-rush (*Lomandra longifolia*); and commelina (*Commelina cyanea*).

The crevices of the rocky cliffs provide habitat for shore spleenwort (*Asplenium obtusatum*), ruby saltbush (*Enchylaena tomentosa*) and pastelflower (*Pseuderanthemum variable*).

The lower sites at the base of the cliffs contain species such as prickly couch (*Zoysia macrantha*), burny vine (*Trophis scandens*) and associated native spinach (*Tetragonia tetragonioides*).

On the northern side of the reserve a semi-permanent freshwater basin supports freshwater swamp species including common reed (*Phragmites australis*) and leafy flat sedge (*Cyperus lucidus*) (Floyd 1981).

The only tree species recorded in the reserve are pandanus palm (*Pandanus tectorius*), strangler fig (*Ficus watkinsiana*), tuckeroo and coastal boobialla (Graham 2001).

The most significant threats to native vegetation in the reserve are weeds and climate change (refer sections 4.1 and 4.3). Fire regimes could also drastically alter current vegetation communities, although to date there have been no recorded instances of fire in the reserve (refer 4.2 Fire).

### **3.3 NATIVE ANIMALS**

Fauna surveys and formal observations of fauna for the reserve date back to 1890 (North 1914 in Lane 1973; Liddy 1964; Lane 1973; Floyd 1981; Charley 1992). The records demonstrate the reserve's importance as habitat for migratory birds, and as a nesting and breeding site for seabirds and shorebirds. The reserve's significance as a seabird breeding habitat is also recognised through its listing on the Register of the National Estate, in particular as habitat for the crested tern and wedge-tailed shearwater (DEWHA 2009).

Twenty-five species of birds and two reptile species are recorded in the reserve (see Table 1). Twelve migratory bird species of international significance visit the island and seven fauna species recorded in the reserve are listed as threatened under the TSC Act.

Under the EPBC Act and TSC Act recovery plans may be prepared to identify actions and priorities for threatened species. Additionally, for species listed under the TSC Act, a Priorities Action Statement (PAS) has been prepared outlining broad strategies and detailed priority actions to promote the recovery of threatened species and to manage key threatening processes in NSW.

**Table 1. Animal species recorded in Cook Island Nature Reserve**

Scientific name	Common name	Legal Status *	Relevant agreement **
<b>Birds</b>			
<i>Anas superciliosa</i>	Pacific black duck		
<i>Arenaria interpres</i>	ruddy turnstone	^	CAMBA/JAMBA /ROKAMBA/Bonn
<i>Egretta sacra</i>	eastern reef egret	^	CAMBA
<i>Gallirallus philippensis</i>	buff-banded rail		
<i>Haematopus fuliginosus</i>	sooty oystercatcher	Vulnerable	
<i>Haematopus longirostris</i>	pieb oystercatcher	Vulnerable	
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	^	CAMBA/ Bonn
<i>Haliastur sphenurus</i>	whistling kite		
<i>Heteroscelus incanus</i>	wandering tattler	^	JAMBA/ Bonn
<i>Ixobrychus minutus</i>	little bittern		
<i>Larus novaehollandiae</i>	silver gull		
<i>Macronectes giganteus</i>	southern giant-petrel	Endangered <sup>#</sup>	Bonn
<i>Morus serrator</i>	Australasian gannet		
<i>Pandion cristatus</i>	eastern osprey	Vulnerable	
<i>Phalacrocorax carbo</i>	great cormorant		
<i>Phalacrocorax varius</i>	pieb cormorant		
<i>Puffinus carneipes</i>	flesh-footed shearwater	Vulnerable <sup>^</sup>	JAMBA/ ROKAMBA
<i>Puffinus pacificus</i>	wedge-tailed shearwater	^	JAMBA
<i>Puffinus tenuirostris</i>	short-tailed shearwater	^	JAMBA/ROKAMBA
<i>Sterna albifrons</i>	little tern	Endangered <sup>^</sup>	CAMBA/JAMBA/ ROKAMBA/ Bonn
<i>Sterna bergii</i>	crested tern		
<i>Sterna caspia</i>	Caspian tern	^	CAMBA /JAMBA
<i>Sterna hirundo</i>	common tern	^	CAMBA/JAMBA/ ROKAMBA <sup>^</sup>
<i>Sterna nilotica</i>	gull-billed tern		
<i>Thalassarche melanophris</i>	black-browed albatross	Vulnerable <sup>^#</sup>	Bonn
<b>Reptiles</b>			
<i>Amphibolurus nobbi</i>	nobbi		
<i>Egernia frerei</i>	major skink		

\* Status under TSC Act

# Denotes species also listed as nationally threatened under the EPBC Act.

<sup>^</sup> Denotes migratory species listed under EPBC Act.

\*\* Relevant agreements for migratory species are:

CAMBA – China Australia Migratory Bird Agreement.

JAMBA – Japan Australia Migratory Bird Agreement.

ROKAMBA – Republic of Korea Australia Migratory Bird Agreement.

Bonn – Convention on the Conservation of Migratory Species of Wild Animals

### 3.4 ABORIGINAL HERITAGE

Aboriginal communities have an association and connection to the land. The land and water within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources with the use and enjoyment of foods and medicines, caring for the land, passing on cultural knowledge, kinship systems and strengthening social bonds. Aboriginal heritage and

connection to nature are inseparable from each other and need to be managed in an integrated manner across the landscape.

The reserve lies within the geographical area originally occupied by the Minjungbal people of the Bundjalung nation while the Githabul and Yugambah nations also have traditional knowledge of the area. The reserve is within the area of the Tweed Byron Local Aboriginal Land Council (LALC).

Although NPWS does not have records of any Aboriginal heritage sites within the reserve there are a number of Aboriginal mythological stories associated with Cook Island as well as some sites known to the community. The Coodjinburra clan of the Bundjalung people called the island Joongurra-Narrian, which means “the place of pelicans”, however, the last recorded nesting of pelicans on the island was in 1922 (Graham 2001).

### **3.5 HISTORIC HERITAGE**

In 1770 Captain James Cook sighted the island while sailing past the Tweed area but did not name it. In 1823 explorer John Oxley and his party took shelter from a storm on the island and two men from the party investigated the island, noting the presence of turtles and an unidentified ship wreck. Oxley named the island Turtle Island. In 1828 Captain Rous conducted the first official survey of the area and renamed the island Cook Island (SMH 2004; Graham 2001).

There was some early ornithological interest in Cook Island. A.J. North recorded that eggs of the crested tern were taken from Cook Island in September 1890 (North 1914 cited in Lane 1973). In 1963, Battam, Lane and Liddy noted shearwaters breeding on the island (Lane 1973).

Prior to 1940 a hut was built on the island by Angus McNeil, a fisherman and photographer from Murwillumbah. The hut was replaced in 1950 by (Don) L.J. Dorrrough who hosted fishing parties on the island. Dorrrough was also reported to have been appointed as an honorary ranger by the Fauna Protection Panel to protect mutton birds breeding on the island. The hut has since been removed and a memorial cairn was constructed on the island in his honour following Dorrrough’s death in 1963 (The Daily News 1964).

The wreck of the ‘Fido’ is submerged off Cook Island at a reef known locally as Fido Reef. It sank on the 19<sup>th</sup> July 1907 carrying 2000 tonnes of phosphate on a voyage from Nauru to Sydney.

### **3.6 VISITOR USE, EDUCATION AND RESEARCH**

Visitor use of the reserve is minimal as its exposed rocky nature combined with frequently rough sea conditions does not allow easy access. There are no visitor facilities in the reserve. Occasionally anchoring of motorised vessels and unauthorised camping has occurred.

Visitor use of the reserve has not been promoted to protect roosting birds and the nest burrows of wedge-tailed shearwaters which are fragile and can easily collapse under foot traffic. The reserve can be viewed from Fingal Head and it would be appropriate to provide off-site interpretative signage to promote public appreciation and understanding of the reserve's values and restrictions on visitor access.

While use of the island is minimal, the waters surrounding the reserve in the Cook Island Aquatic Reserve are used for swimming, boating and diving. Fishing is prohibited in all waters from the mean high water mark on the island to a boundary defined by five marker buoys. Fishing (except by setlines) is allowed outside this exclusion zone within the rest of the aquatic reserve and surrounding waters. Thirteen moorings at popular diving locations around the island have replaced the need to anchor and protects fragile corals and other marine invertebrates while providing safe mooring for vessels (see Map).

Research has to date been limited to occasional ornithological and plant surveys. Staff record observations of fauna and plants, including weeds, during visits to the reserve.

## 4. ISSUES

### 4.1 PEST ANIMALS AND WEEDS

No introduced vertebrate pests or evidence of their occurrence has been observed in the reserve. There is some (albeit unlikely) potential for the introduced black rat (*Rattus rattus*) to occur on the reserve, which could prey on native bird eggs and chicks.

The pandanus planthopper (*Jamella australiae*) is a potential threat to pandanus palms in the reserve. The planthopper is an insect which naturally occurs in far north Queensland but has caused dieback in pandanus palms (*Pandanus tectorius*) in northern NSW and was first recorded in the Northern Rivers Region in 2004 on the Tweed Coast near Kingscliff and Bogangar. Regular surveys are undertaken in the Northern Rivers Region to determine the presence/absence of the plant hopper in coastal reserves, but to date the reserve has not been surveyed and planthopper has not been recorded in the reserve.

Nine introduced plant species have been recorded in the reserve (see Table 2). Trad (*Tradescantia fluminensis*) is the dominant weed species in the reserve (Floyd, 1981; Lane, 1973).

The Northern Rivers Region Pest Management Strategy 2008-2011 (DECC, 2007) details priorities for pest management in the region including actions listed in the Priorities Action Statement (PAS) and Threat Abatement Plans (TAP) The strategy identifies the control of pandanus planthopper as a critical priority for all coastal parks in the region. Key Threatening Processes in the reserve include the 'invasion and establishment of exotic vines and scramblers, and invasion of native plant communities by exotic perennial grasses'. *Tradescantia fluminensis*, *Ipomoea cairica*

and *Paspalum urvillei*, along with the Noxious Weed, *Baccharis halimifolia*, have been recorded in the reserve in the past and are priorities for removal if they are found to become re established. Survey work on Muttonbird Island and Lord Howe Island has indicated that invasion by exotic perennial grasses can severely degrade breeding habitat for shearwaters.

**Table 2. Weeds recorded in Cook Island Nature Reserve.**

Weeds	
Scientific Name	Common Name
<i>Baccharis halimifolia</i> #	groundsel bush
<i>Digitaria ciliaris</i>	summer grass
<i>Eleusine indica</i>	crowsfoot grass
<i>Paspalum urvillei</i> ~	vasey grass
<i>Crassocephalum crepidioides</i>	thickhead
<i>Sonchus oleraceus</i>	common sowthistle
<i>Ipomoea cairica</i> ~	coastal morning glory
<i>Solanum lycopersicum</i>	tomato
<i>Tradescantia fluminensis</i> ~	trad

# Declared noxious under *Noxious Weed Act 1993*

~ Key threatening process under TSC Act

## 4.2 FIRE

While the NPWS regards fire as a natural phenomenon in most vegetation communities, it is highly unlikely on offshore islands. Fire can have a devastating effect on shearwater burrow habitat and cause the death of breeding birds. Although the fuel load is not great, the high level of humus in the soil combined with good ventilation from the burrows could result in ground fires that can cover a large area undetected. Based on the impacts of fires on Muttonbird Island and South West Solitary Island near Coffs Harbour, recovery from fire events takes decades before vegetation returns to a condition able to support breeding shearwaters.

The primary fire management objectives of the NPWS are to protect life and property and community assets from the adverse impacts of fire, while managing fire regimes to maintain and protect biodiversity and cultural heritage.

A separate Fire Management Strategy has been prepared for the reserve (NPWS, 2006). The Fire Management Strategy identifies the nesting burrows of wedge-tailed shearwaters as delicate structures which are easily damaged by foot traffic and potentially water bombing activities during fire control activities. There is no recorded history of fire ignitions within the reserve and no assets threatened by fire. NPWS has assessed the reserve for fire management planning purposes and determined that it has a low level of fire risk.

The reserve is zoned as a Land Management Zone (LMZ) because of the small size of the reserve, the lack of fire prone vegetation and the presence of large numbers of roosting and nesting seabirds and shorebirds. The primary fire management objectives of LMZ are to promote fire regimes which meet the ecological requirements of species that are known to occur naturally within the reserve, to protect nesting and roosting seabirds and shorebirds and to protect culturally significant sites.

### **4.3 CLIMATE CHANGE**

Climate change has been listed as a key threatening process under the TSC Act. Projections of future changes in climate for NSW include higher temperatures, increasing sea levels and water temperatures, more intense but possibly reduced annual average rainfall, increased temperature extremes and higher evaporative demand. These changes are likely to lead to greater intensity and frequency of fires, more severe droughts, and increased regional flooding.

Climate change may significantly affect biodiversity by changing population size and distribution of species, modifying species composition, and altering the geographical extent of habitats and ecosystems. Species most at risk are those unable to migrate or adapt, particularly those with small population sizes or with slow growth rates. The potential impact of climate change is difficult to assess since it depends on the compounding effects of other pressures, particularly barriers to migration and pressure from feral animals. Programs to reduce the pressures arising from such threats will help reduce the severity of the effects of climate change.

Sea level rise and more frequent storms are likely to directly impact on birds using the reserve, by reducing available habitat and interfering with nesting and breeding. The adopted sea level benchmark for NSW are for a rise relative to 1990 mean levels of 40 centimetres by 2050 and 90 centimetres by 2100 (DECC 2009).

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## 6. IMPLEMENTATION

Current Situation	Desired Outcomes	Management Response	Priority*
<p><b>6.1 On-Park Ecological Conservation</b>                      The reserve provides habitat for sea birds and shore birds, including twelve migratory species of international significance. Seven fauna species that occur in the reserve are listed under the TSC Act (see Table 1).</p> <p>Threats to the ecological values of the reserve include: disturbance by visitors; fire; weeds and climate change. Climate change has also been identified as a key threatening process under the TSC Act. Visitor access to the reserve will be restricted (refer 6.3 Visitor Use and Services). Appropriate pest and fire management may improve the resilience of species to climate change and other threats (refer 6.4 Weeds and Pest Animals and 6.5 Fire Management).</p> <p>Recovery Plans and PAS have been prepared for threatened species in the reserve. Actions include weed control and fire protection.</p> <p>It would be appropriate to zone the reserve E1 'National Parks and Nature Reserves' under the Tweed Local Environmental Plan'.</p> <p>Little research has been conducted on the reserve other than occasional ornithological and plant surveys. During maintenance trips to the reserve staff take opportunistic</p>	<p>Native plant and animal species and communities are conserved.</p> <p>The reserve is protected as a habitat for migratory birds.</p> <p>Management of the reserve contributes to the resilience of native species to the negative effects of climate change, fire and weeds.</p> <p>Knowledge of plants and animals and their ecological requirements are better understood.</p>	<p>6.1.1 Implement relevant strategies and actions in the PAS and recovery plans for threatened species (according to the priorities set within available resources).</p> <p>6.1.2 Liaise with Tweed Shire Council about zoning the reserve in the Tweed LEP to E1 'National Parks and Nature Reserves'.</p> <p>6.1.3 Continue making opportunistic observations of fauna and flora, including weeds during maintenance visits to the reserve.</p> <p>6.1.4 Encourage research and monitoring which assists management of the reserve, such as into threatened and migratory bird species, native vegetation, pest species and climate change and the impact on reserve values.</p>	<p>High</p> <p>Low</p> <p>Medium</p> <p>Medium</p>



Current Situation	Desired Outcomes	Management Response	Priority*
<p><b>6.3 Visitor Use and Services</b>                      Visitor use of the reserve is minimal because of its exposed rocky nature and difficulties with access.</p> <p>The reserve can be viewed from Fingal Head where there may be an opportunity to promote understanding of the reserve's values through off-site interpretation.</p> <p>The waters surrounding the reserve in the Cook Island Aquatic Reserve are used for swimming, whale watching, boating and diving. Fishing is prohibited within a boundary defined by five marker buoys. Moorings around the island have replaced the need to anchor.</p>	<p>The community are aware of the significance of the reserve and the need to restrict visitor access.</p>	<p>6.3.1 Recreation use of the reserve will not be permitted to protect nesting and roosting habitat of migratory and threatened sea birds.</p> <p>6.3.2 Investigate a suitable location at Fingal Head to install interpretive signage about the reserve's values and restrictions on access. Consideration may be given to incorporating information on the adjoining aquatic reserve.</p> <p>6.3.3 If unauthorised access to the reserve becomes an issue in the future, NPWS will investigate suitable off reserve locations to advise boat operators of restrictions on access.</p>	<p>Ongoing</p> <p>Low</p> <p>Low</p>
<p><b>6.4 Weeds and Pest Animals</b>                      The Regional Pest Management Strategy identifies priorities for pest control programs across the region.</p> <p>Nine introduced plant species have been recorded in the reserve (see Table 2).</p> <p>The pandanus planthopper, has the potential to be a threat to pandanus palms (<i>Pandanus tectorius</i>) within the reserve (refer to 4.1).</p>	<p>Introduced plants and animals are controlled and where possible eliminated.</p> <p>Negative impacts of weeds and pests on reserve values are stable or diminishing.</p>	<p>6.4.1 Prepare and implement a pest management strategy for the reserve. Pending preparation of this plan, continue to manage pests and weeds in accordance with the Regional Pest Management Strategy.</p>	<p>Medium</p>

Current Situation	Desired Outcomes	Management Response	Priority*
<p><b>6.5 Fire Management</b>            There is no record of fire in the reserve and the reserve is considered to be at a low risk of natural fire. However, based on experiences from other seabird islands, fires have the potential to have a devastating impact on the island's vegetation communities and burrowing habitat for shearwaters.</p> <p>During fire suppression operations the nesting burrows of shearwaters could be easily damaged by foot traffic or water bombing.</p> <p>A Fire Management Strategy has been prepared for the reserve which zones the reserve as a Land Management Zone (LMZ) to conserve biodiversity. The Strategy includes strategies to protect sensitive nesting seabirds and nesting burrows.</p>	<p>Life, property and natural and cultural values are protected from fire.</p> <p>Fire regimes are appropriate for conservation of native plant and animal communities.</p>	<p>6.5 Implement the reserve's Fire Management Strategy, including measures to protect nesting burrows of shearwaters.</p>	<p>High</p>

Current Situation	Desired Outcomes	Management Response	Priority*
<p><b>6.5 Infrastructure and Maintenance</b> There are identification signs for the reserve and aquatic reserve located within the reserve.</p> <p>The only other structures on the reserve are a memorial cairn (refer 6.2 Cultural heritage) and a survey marker managed by the Land and Property Management Authority. NPWS policy on surveying activities includes a requirement that an appropriate level of environmental impact assessment is undertaken for any vegetation clearing or other works associated with surveying activities within NPWS estate.</p>	<p>Infrastructure and assets are routinely maintained.</p> <p>Existing non-reserve infrastructure is managed to minimise impacts on natural and cultural values.</p>	<p>6.6.1 Consult with the Land and Property Management Authority about access for maintenance or repair works of the survey marker in accordance with NPWS policy.</p> <p>6.6.2 Maintain the existing signs in the reserve. Regulatory signage may be installed (including signage prohibiting fires) if monitoring indicates an unacceptable level of unauthorised access.</p>	<p>Low</p> <p>Medium</p>

\* **High** priority activities are those imperative to achievement of the objectives and desired outcomes. They must be undertaken in the near future to avoid significant deterioration in natural, cultural or management resources.

**Medium** priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent.

**Low** priority activities are desirable to achieve management objectives and desired outcomes but can wait until resources become available.

**Ongoing** is for activities that are undertaken on an annual basis or statements of management intent that will direct the management response if an issue that arises.





